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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,436	07/16/2003	Oliver Meyer	237707US0	6953

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EXAMINER
LAO, MARIALOUISA

ART UNIT	PAPER NUMBER
1621	

NOTIFICATION DATE	DELIVERY MODE
09/28/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/619,436	MEYER ET AL.	
	Examiner	Art Unit	
	M. Louisa Lao	1621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 March 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6/17/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see REMARKS, filed 3/12/07, with respect to the rejection(s) of claim(s) 1-20 under 35USC103(a) have been fully considered, and are not found persuasive.

2. New claims 21-22 are acknowledged.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. The rejection of claims 1-20, as amended, is maintained under 35 U.S.C. 103(a) as being unpatentable over Naohiro Kubota et al. (JP56-025185, J P`815 *equivalent to* US4323684, US`684); and further in view of Buzzard et al. (WO02/22593, WO '593).

Applicant Claims

6. The instant claims are drawn to a process for ketalizing triacetonamine, which comprises reacting triacetonamine and a hydroxyl derivative having one or more hydroxyl groups with gaseous hydrogen chloride to yield the open-chain or cyclic triacetonamine ketal, in the presence of an acyclic solvent, acyclic hydrocarbon, cyclic hydrocarbon, or an aromatic hydrocarbon.

Determination of the Scope and Content of the Prior Art (MPEP §2141.01)

7. JP `185 shows that the use of acids in the preparation of piperidone ketals, in the presence of solvents, had been disclosed at the time of the invention. JP`185 discloses the reaction of a

piperidone with a polyhydric alcohol in a hydrocarbon solvent at 60- 200°C with the distillation of water to attain a 4-piperidone spiroketal compound (see page 1 under Constitution).

8. Equivalent thereto, US`684 teaches a process for the preparation of 2,2,6,6-tetraalkyl-4-piperidylsprio aliphatic ether (represented by formula I, column lines 24-33) **or** an acid addition salt thereof. In column 4 lines 24-31, US`684 teaches the use of an acid catalyst in the reaction mixture can range from 0.01% to about 10% by weight; where the acid catalysts include hydrochloric acid, sulfuric acid, phosphoric acid and p-toluenesulfonic acid, and other acids having in 1% aqueous solution a pH not greater than 3. Further, US`684 teaches in columns 4-5, the reaction of triacetonamine hydrochloride, dipentaerythritol in the presence of p-TSA in different solvent systems; the reaction subsequently neutralized, washed and dried, with yields ranging from 40-94% and reacted hydroxyl derivative ranging from 48- 96% and temperature of reaction from 20-300°C (column 4 lines 33-34). US`684 also teaches that water produced as a by-product is suitably removed as an azeotrope with a hydrocarbon such as toluene, xylene, hexane and octane; or alternatively, allowed to accumulate and removed after isolation of the product (column 4 lines 17-23).

Ascertainment of the Difference
Between Scope of the Prior Art and the Claims
(MPEP §2141.012)

9. JP`185 or US`684 differ from instant claims in the working example shown to typify the process, where the instant claims use triacetanomine neat and the former use the salt version. Moreover, the phase of the acids, the instant claims use the gaseous phase and the former typify the process using liquid phase of the acid catalyst.

Finding of Prima Facie Obviousness Rational and Motivation
(MPEP §2142-2143)

10. At the time of the invention, one of ordinary skill in the art looking to use a process for ketalization of piperidone would have found it *prima facie* obvious to start with the teachings of the cited prior art references The artisan skilled in the art would be motivated to use hydrogen chloride acid catalysts since the hydrogen chloride catalysts are equivalent to the acid catalysts used by the method of JP `185 or US`684; since the JP `185 or US`684 method similarly uses piperidone compounds reacted with hydroxyl derivatives to produce the similar products of ketals as in the present invention.

Albeit JP `185 or US`684 is silent on the use of hydrogen chloride acid catalysts in the gaseous form, WO `393 art is relied upon to emphasize the use of acid catalysts in the gaseous form, in particular hydrochloric acid (see page 2 lines 12-13 and page 3 lines 20-21) for the gaseous catalysis of the conversion of pentose or pentosan to furfural (see page 1 lines 2-3).

It would be obvious to use hydrogen chloride acid catalysts, regardless of physical form, in the method of preparing ketals in JP `185 or US`684 since the usage of these alternate forms of acid catalysts have been shown to work as disclosed in WO `393, and would be within the purview of the artisan skilled in the art at the time of the invention.

The use of the alternate form of acid catalysts would render the ketal reaction to proceed with a reasonable degree of success, as desired in the instant invention.

The claim would have been obvious because the substitution of one known element for another would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations would have been predictable to one of ordinary skill in the art.

The claim would have been obvious because the design incentives or market forces provided a reason to make an adaptation, and the invention resulted from application of the prior knowledge in a predictable manner.

11. The new claims 21-22 are concurrently rejected by Applicants' amendment to the claims.

12. The combination of the teachings of the cited prior art references is fairly suggestive of the *prima facie* obviousness of the instant claims, as amended.

Response to Arguments

12. Applicants arguments focus on the form of the starting materials and the solvents exemplified by JP `185 or US`684. Applicants may have misread the working examples of US`684, where the different solvent systems engaging one inorganic liquid catalyst (i.e.pTSA) actually show yields ranging from 48- 96%, contrary to Applicants' allegation of (i.e. no greater than 47%); albeit the salt of triacetonamine is the starting material. Even if *arguendo* JP `185 or US`684 uses the salt version of triacetonamine, the instant claims are not commensurate to Applicants' arguments that the form of starting material has an effect on the yield of the desired product. Further, Applicants focus on the difference of reactions of JP `185 or US`684 and WO `393, the difference in reactions is not the crux of the matter, but the use of a similar acid catalyst. WO`393 teaches that hydrochloric acid in gaseous form works as an acid catalyst, albeit in a different reaction. To reiterate, based on the flow of the teachings of the cited prior art references:

Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations would have been predictable to one of ordinary skill in the art.

The claim would have been obvious because the design incentives or market forces provided a reason to make an adaptation, and the invention resulted from application of the prior knowledge in a predictable manner.

In this case, the market forces of cost and ease of handling prompts the artisan of ordinary skill in the art at the time of the invention to adapt measures proven to work in his own process, such as the use of a different form of a known catalyst, or alternate solvents.

The claim would have been obvious because " a person or ordinary skill has a good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product, not of innovation, but of ordinary skill and common sense."

Applicants further contend that the solid phase of the reactants will detract from the use of an acid in the gaseous form; but provide no reason to this effect. Applicants, when focusing on the solvent systems in the JP `185 or US`684, which are drawn to polar solvents does not render obvious the use of non-polar solvents in the instant claims, as amended; must have forgotten their earlier statement that JP `185 or US`684 actually showed that the use of polar solvents in addition to or in lieu of (toluene/n-hexane or paraffin) in the reaction, effectuated to higher yields of 84-94% (REMARKS page 9 line 4).

To clarify the substance of the interview on 2/6/2007, the Office did not concede that the cited prior art reference did not disclose at least one feature of the presently claimed invention; but took Applicants' arguments and presentation at said interview into advisement for consideration into the examination of the recited claims, as amended.

13. In view of the foregoing discussion, the rejection of claims 1-22 under 35 U.S.C. 103(a) is maintained.

14. There are no allowable claims.

15. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MLouisa Lao whose telephone number is 571-272-9930. The examiner can normally be reached on Mondays to Thursdays from 8:00am to 8:00pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yvonne Eyler can be reached on 571-272-0871. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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